



Patents Office
Government Buildings
Hebron Road
Kilkenny

I HEREBY CERTIFY that annexed hereto is a true copy of documents filed in connection with the following patent application:

Application No. S980599

Date of Filing 21 July 1998

Applicant ALLTRACEL PHARMACEUTICALS PLC, an Irish company of 87 Quinns Road, Shankill, County Dublin, Ireland.

Dated this 11 day of December, 2000.



An officer authorised by the
Controller of Patents, Designs and Trademarks.

REQUEST FOR THE GRANT OF A PATENT

PATENTS ACT, 1992

The Applicant(s) named herein hereby request(s)
the grant of a patent under Part II of the Act

X the grant of a short-term patent under Part III of the Act
on the basis of the information furnished hereunder.

1. Applicant(s)

Name Alltracel Pharmaceuticals PLC

Address 87 Quinns Road
Shankill
County Dublin
Ireland

Description/Nationality

An Irish company

2. Title of Invention

"Compounds"

3. Declaration of Priority on basis of previously filed application(s) for same invention (Sections 25 & 26)Previous filing date

Country in or for
which filed

Filing No.4. Identification of Inventor(s)

Name(s) of person(s) believed
by Applicants(s) to be the inventor(s)

Name: Ivan Santar, a citizen of the Czech Republic

Address: Travniky 1006, CZ-6602 Predklasteri, Czech Republic.

Name: Frantisek Kiss, a citizen of the Czech Republic

Address: Bednarova 20a, CZ-61900 Brno, Czech Republic.

Name: Jiri Briestensky, a citizen of the Czech Republic

Address: Skolska 413, CZ-50343 Cernilov, Czech Republic.

5. Statement of right to be granted a patent (Section 17(2)(b))

The Applicant derives the rights to the invention by virtue of Agreements dated December 23, 1996 and December 30, 1996.

6. Items accompanying this Request – tick as appropriate

- (i) prescribed filing fee (£50.00)
- (ii) specification containing a description and claims
 specification containing a description only
 Drawings referred to in description or claims
- (iii) An abstract
- (iv) Copy of previous application (s) whose priority is claimed
- (v) Translation of previous application whose priority is claimed
- (vi) Authorisation of Agent (this may be given at 8 below if this Request is signed by the Applicant (s))

7. Divisional Application (s)

The following information is applicable to the present application which is made under Section 24 –

Earlier Application No:

Filing Date:

8. Agent

The following is authorised to act as agent in all proceedings connected with the obtaining of a patent to which this request relates and in relation to any patent granted -

Name

John A. O'Brien & Associates

Address

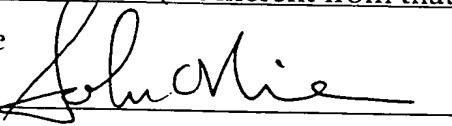
The address recorded for the time being in the Register of Patent Agents, and currently Third Floor, Duncairn House, 14 Carysfort Avenue, Blackrock, Co. Dublin, Ireland.

9. Address for Service (if different from that at 8)

As above

Signed

Date July 21, 1998

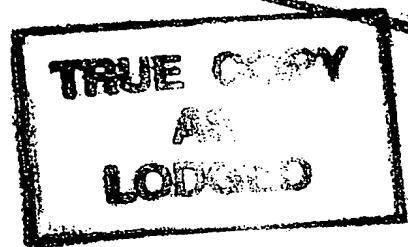

JOHN A. O'BRIEN & ASSOCIATES

~~APPLICATION~~

S 980599

- 1 -

"Compounds"



Introduction

5 The invention relates to polyanhydroglucuronic acids and salts thereof. The term polyanhydroglucuronic acid and salts thereof as used herein includes copolymers thereof, especially with anhydroglucose.

10 Co-pending patent application PCT IE98/00003 describes a haemostatically active aerosol composition of polyanhydroglucuronic acid and/or acceptable salts thereof.

15 Co-pending patent application PCT IE98/00004 describes particular polyanhydroglucuronic acids and salts thereof and a method of preparing such compounds.

In particular therefore, the term polyanhydroglucuronic acids and salts thereof includes the acids and salts referred to in our co-pending applications mentioned above.

20 This invention relates especially to formulations incorporating polyanhydroglucuronic acids and salts thereof.

Statements of Invention

25 According to the invention there is provided a polycomplex comprising polyanhydroglucuronic acid and salts thereof and a biocompatible complexing material.

30 Preferably the complexing material is a cationic oligosaccharide or polysaccharide, an oligopeptide or polypeptide and/or a protein.

Most preferably the complexing material is a natural or semisynthetic cationic polysaccharide or a synthetic polypeptide.

5 In a preferred embodiment of the invention the polyanhydroglucuronic acids and salts thereof are those described in co-pending Application PCT IE98/00004.

Detailed Description

10 Polyanhydroglucuronic acid and salts thereof, particularly as described in co-pending Application PCT IE98/00004 may be used in conjunction with suitable complexing materials to form a polycomplex with enhanced efficiency and mechanical properties.

15 The polycomplexes are biocompatible and absorbable complexes of the material with cationic oligosaccharides, polysaccharides, peptides, or proteins. While the complexing material may be structural glucans isolated of animal origin such as bovine collagen or elastins, the risk of contamination with viruses, prions or bacteria, makes it preferable to use natural or semisynthetic cationic polysaccharides, or synthetic polypeptides. The applicable substances may involve e.g. fractionated chitin, chitosan, cationized starch or cellulose derivatives, or gums such as e.g. guarhydroxypropyltrimmoniumchloride, polylysine or polyarginine as examples of polypeptides, or else e.g. polyamides and polyimines.

20 Such polycomplexes are non-toxic and, due to surface reinforcement, display increased abrasion resistance, while not deteriorating the physiological properties of the polyanhydroglucuronic acid and salts thereof.

25

In addition, it is possible to support the inherent immunomodulative effects of the
30 polyanhydroglucuronic acid and salts thereof by binding suitable active substances to the polymeric chain of the former in the form of salts or complex salts. Such

substances may include immunomodulators such as enzyme (aminopeptidase, esterase) blockers, e.g. bestatin or forfenicin, or antibiotics, e.g. arfamenins. The products obtained may with advantage be used as microembolisation agents, and may in some cases be combined with suitable types of cytostatics or suppressor 5 cell inhibitors such as the nucleosid oxanozim separated from the Actinomycet species.

The invention is not limited to the embodiments hereinbefore described which may be varied in detail.